

Introduction

Atrial fibrillation (AF) is the most common arrhythmia after coronary artery bypass grafting (CABG), with a rate of occurrence of 17% to 33% in different studies.(*Hakala & Hedman , 2003*)

Patients undergoing CABG and combined valve surgery have a higher incidence of postoperative AF than do patients having CABG alone. (*Creswell et al., 1993*)(*Creswell & Damiano, 2001*)

The peak of AF incidence occurs between 2 and 4 days after operation, with <10% happening on the first postoperative day. (*Aranki et al., 1996*)

AF after CABG is self-limiting in most cases, but even when it is uncomplicated; it requires additional medical treatment and a prolonged hospital stay and has the concomitant extra costs of operative treatment. (*Aranki et al., 1996*) (*Borzak et al., 1998*) (*Creswell & Damiano, 2001*)

Post-CABG AF is known to be a potential risk for systemic thromboembolism, hemodynamic compromise, and even stroke. (*Creswell et al., 1993*) (*Aranki et al., 1996*) (*Borzak et al., 1998*) (*Creswell & Damiano, 2001*) (*Hravnak et al., 2002*)

Therefore, it is advisable that prophylactic therapy with amiodarone or atrial pacing be administered to decrease its incidence. (*Daoud et al., 1997*)(*Guarnieri et al., 1999*)

However, prophylactic treatment to prevent AF with intravenous amiodarone is not cost-effective if given to all patients. In addition, such treatment may have unfavorable side effects. On the other hand, the prophylaxis of the whole patient population undergoing CABG is not reasonable and this renders the identification of at-risk patients of post-CABG AF very helpful. (*Mahoney et al., 2002*)

To that end, several studies have used different ECG and echocardiographic parameters (eg, P-wave duration and left atrial [LA] volume). They all, however, have limitations. (*Hakala & Hedman, 2003*) .

Using M-mode Doppler tissue, *Omi and colleagues, 2005* have evaluated the ability of the atrial electromechanical coupling to detect atrial impairment in paroxysmal AF. They found that the time interval from the onset of the P wave to the beginning of the backward motion of the mitral was prolonged in paroxysmal AF.

In light of the above-mentioned studies, we hypothesized that the atrial electromechanical interval (AEMI) as a measure of atrial impairment could be helpful in detecting patients facing the risk of post-CABG AF.